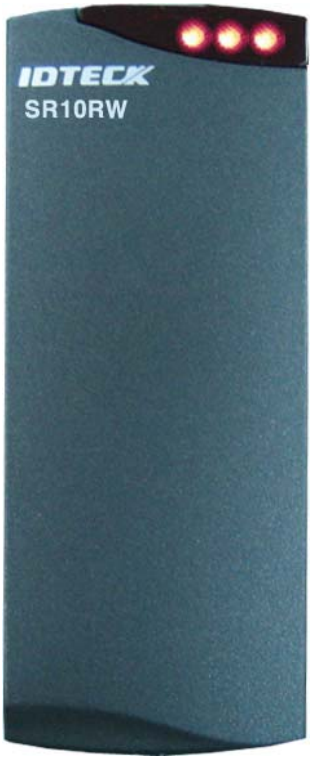
IDTECK SR10RW

13.56MHz [MIFARE]

Contactless Smart Card Reader / Writer



IDTECK

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1. Important Safety Instructions

When using 13.56MHz [MIFARE] Contactless Smart Card Reader / Writer, basic safety precautions should always be followed to reduce the risk of fire, electrical shock, and injury to persons.
In addition, the following safety guides should also be followed:

1. Fully read and understand all instructions and follow them completely.
2. Follow all warnings and instructions marked on the product.
3. Do not use liquid or aerosol cleaners. Use a damp cloth for cleaning. If necessary, use mild soap.
4. Do not use this product near water.
5. Only operate this product using the type of power source indicated. If you are not sure of the type of power supplied to your installation site, consult your dealer of local power company.
6. Never insert objects of any kind into the product or through the cabinet slots as they may touch voltage points and/or short circuit parts possibly resulting in fire or electric shock.
   Never spill liquid of any kind on the product.
7. Never disassemble this product by yourself; take the unit to a qualified service center whenever service or repair is required. Opening or removing the covers may expose you to dangerous voltages or other risks. Also, incorrect reassembly can cause electric shock when the unit is subsequently used.
8. Unplug this product from the Direct Current (DC) power source and refer to qualified service personnel under these conditions:
   a. When the power supply cord or plug is damaged or frayed.
   b. If liquid has been spilled on the product.
   c. If the product does not operate normally after following the operating instructions in this manual. Adjust only those controls that are covered by the operating instructions in this manual. Improper adjustment of other controls that are not covered by this manual may damage the unit and will often require extensive work by a qualified technician to restore normal operation.
   d. If the product exhibits a distinct change in performance.

2. General

The IDTECK SR10RW Smart Card Reader / Writer can be compatible with Philips Mifare™ Card.
The unit provides integrated operation of reader and writer and is designed by which can install easily to door frame or wall.
The IDTECK SR10RW is elegant looking and built in an attractive 10cm (4") read range smart card reader. It also reads serial numbers from Philips Mifare™ Cards compatible, and can read and write special data of memory field internal card when operating of the unit is set by PRG2000.
The IDTECK SR10RW can support communication between PRG2000, PC and third party controller using methods of RS232 and RS485.
Three LED indicators of red and green, inside Piezo buzzer sound will guarantee you an accurate and reliable system operations.

3. Features

- 13.56MHz [MIFARE] Contactless smart Card Reader / Writer
- Read Range: Up to 4 inch (10cm)
- Read the Card which is issued by PRG2000 (Smart Card Read / Write Programmer)
- RS232 / RS485 (default), 26 / 34bit Wiegand (selectable) Output Format
- 3 Array LED Indicators (Red and Green) and Beeper
- External LED Control
- External Buzzer Control
- Easy to install on Mullion Mounting suitable
- Solid Epoxy Potted
- Waterproof / IP65 / IP66
- Warranty: Life Time
- Reverse Polarity Protection
- Compatible Software: Smart Card Read / Write Software
- Compatible Controller:
  (26bit Wiegand) iCON100, iTDC, Third Party Controller
  (34bit Wiegand) iCON100SR, iTDC-SR, Third Party Controller

4. Specification

Model	SR10RW
CPU	8bit Microprocessor
Frequency	13.56MHz [MIFARE]
Read Range	ISK50 / IMC135: Up to 2 inch (5cm), ISC80: Up to 4 inch (10cm)
Reading Time	30ms
Power / Current	DC12V / Max.150mA
Output Format	RS232 / RS485 (Default), 26 / 34bit Wiegand (Selectable)
LED Indicator	3 Array LED Indicators (Red, Green)
Beeper	Piezo Buzzer
Operating Temperature	-35° to +65°C (-31°F to +149°F)
Operating Humidity	10% to 90% relative humidity non-condensing
Color	Dark Pearl Gray
Material	Polycarbonate
Dimension (W x H x T)	1.8" X 4.5" X 0.88" (47mm X 115mm X 22mm)
Weight	120g (0.26lb)
Certification	FCC, CE, MIC

[Card reading range by Contactless Smart[Mifare] Reader Series]

Model		ISC80	ISK50	IMC135	IHC80
Read Range	SR10 / SR30 / SRK101	4 inch (10cm)	2 inch (5cm)		
	SR10B / SR30B / SRK101B	4 inch (10cm)	2 inch (5cm)		
	SR10RW / SR10RW / SRK101RW	4 inch (10cm)	2 inch (5cm)		
	FINGER007SR(B) FINGER006SR(B) FGR006SR(B)	4 inch (10cm)	2 inch (5cm)		
	SR505	4 inch (10cm)	2 inch (5cm)		
	FACE007SR FACE006SR	4 inch (10cm)	2 inch (5cm)		

5. Identifying Supplied Parts

Please unpack and check the contents of the box.

Reader Module (1ea)

SR10RW Bezel (1ea)

User's Manual (1copy)

Screws (2ea)

6. Installation

6-1. Mullion/Wall Mount:

Drill 6-32 or M3 screws hole at 3.3" (8.38cm) intervals vertically

And drill one 1/2" hole between previously drilled two holes for the reader cable 1.7" apart from the top hole.

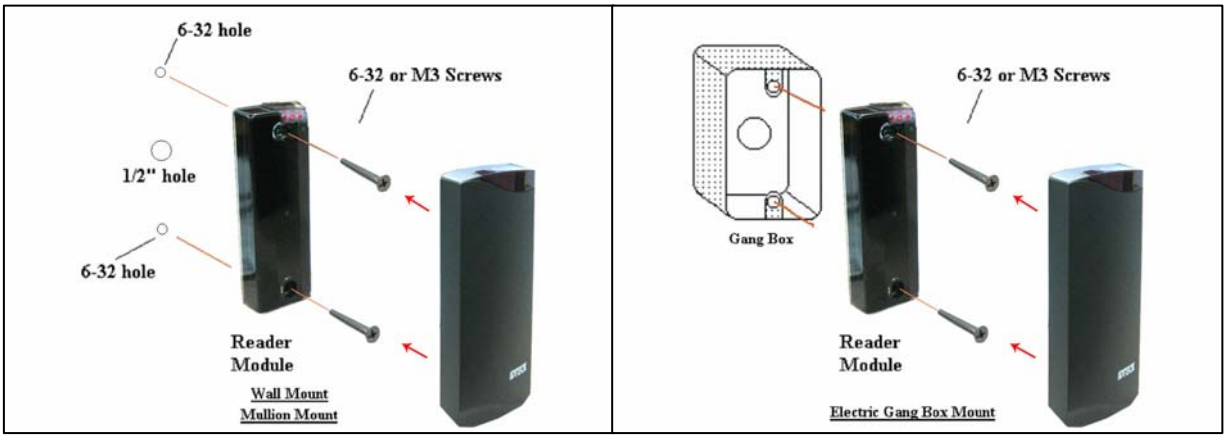
(If the gang box is already installed on the wall then skip this step.)

6-2. Fixing Reader Module

Put reader cable into the center hole and fix the reader module using two 6-32 or M3 screws.

6-3. Putting on the cover

Put on cover into the reader module, and then push it until hearing the locking sound.



6-4. Installation consideration

6-4-1. Installation of SR10RW on metal

Read range will be reduced if located on metal surfaces or in the vicinity of metal objects. The amount of reduction will be a factor of the amount of metal and the distance the Reader is from the metal. Metal near the Reader absorbs energy from the Reader excite field and affects the signal being received from the card by re-directing excite field transmissions into the receiver circuitry. Moving the Reader away from the metal objects reduces energy loss.

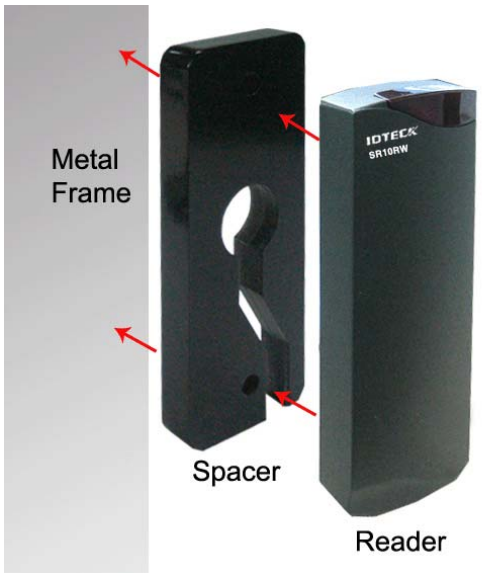
Try to limit the amount of metallic materials installed near the SR10RW.

Use a plastic electrical box if possible.

When installing the Reader on metal door frame, add Isolation Spacers between the Reader and metal door frame. If you do so, read range reduction can be improved.

The typical read distance specification (2-4 inches at 12VDC) refers to operation without metal in the vicinity of the Reader.

The read distance will be reduced if metal is installed nearby. The SR10RW generate a magnetic field on all sides of the Reader. Any metal that conducts electricity, especially metal that contains iron, steel or copper will interfere with the field and reduce the effective spacer between the Reader and the metal object.



① Installation of two readers side by side and back to back

Read range is not affected if the side by side distance between two readers is equal to or greater than eight inches (20cm). If the distance between the two readers is less than eight inches (20cm), field interference between the two readers may result in a double-badge read.

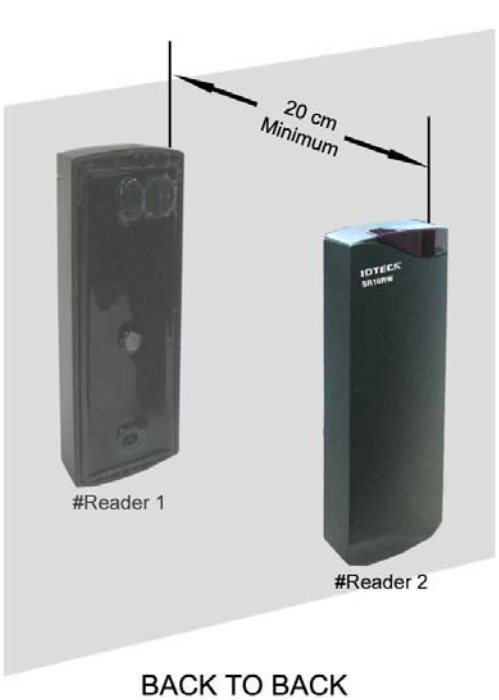
Note

Two readers can simultaneously read the same badge or tag if the distance between the two readers is less than 8 inches (20cm), side by side.

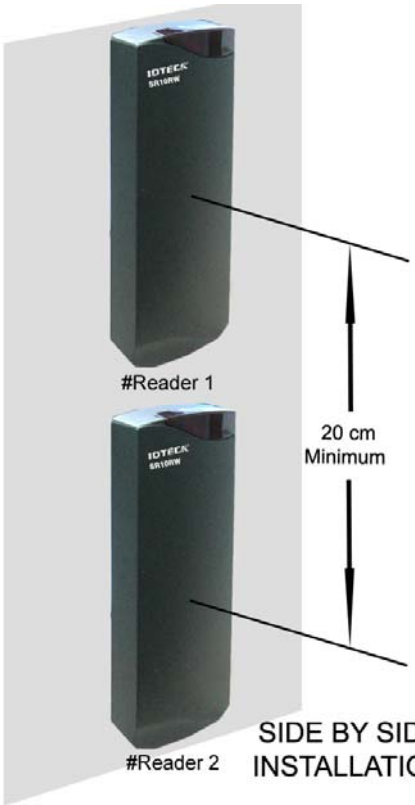
When installing two readers back-to-back on a wall that will separate the two readers by eight inches (20cm) or less, a metal plate (for example: Reader isolation plate, metal wall) must be placed between the readers. To obtain the maximum read range, mount each proximity reader onto one or more Isolation Spacers.

Note

Two readers can simultaneously read the same badge or tag if the distance between the two readers is less than 8 inches (20cm), back-to-back.



BACK TO BACK
INSTALLATION



SIDE BY SIDE
INSTALLATION

7. Color Coded & Wiring Table

SIGNAL	COLOR
Main Power (+12V)	Red
Power Ground (GND)	Black
ABA Track II CP Out	Orange
Wiegand Data 0 Out / ABA Track II Data Out	Green
Wiegand Data 1 Out / ABA Track II Clock Out	White
Tamper Switch Out	Gray
RS232 (TX)	Purple
RS232 (RX)	Brown
RS485 (A)	Pink
RS485 (B)	Cyan
* Please cut out tail connector before installation.	

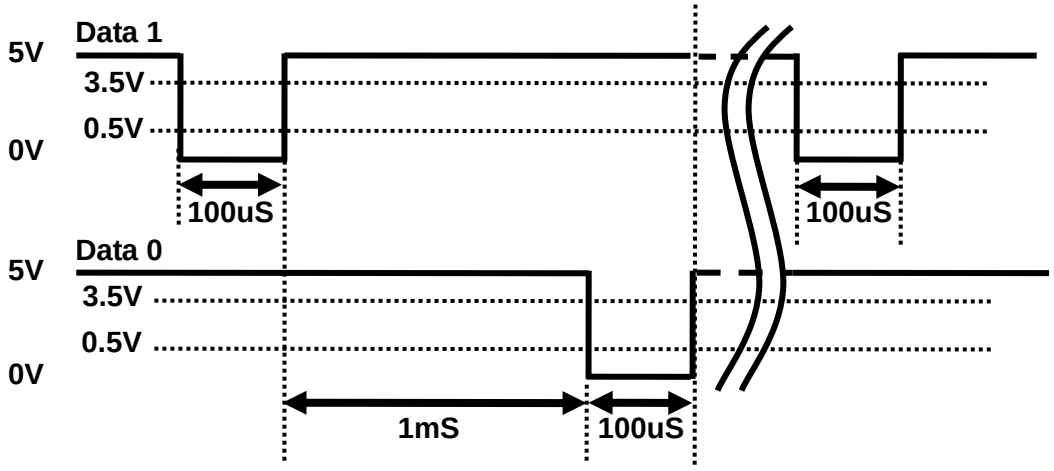
8. Output Format

8-1. 26/34bit Wiegand output format

1. Data format

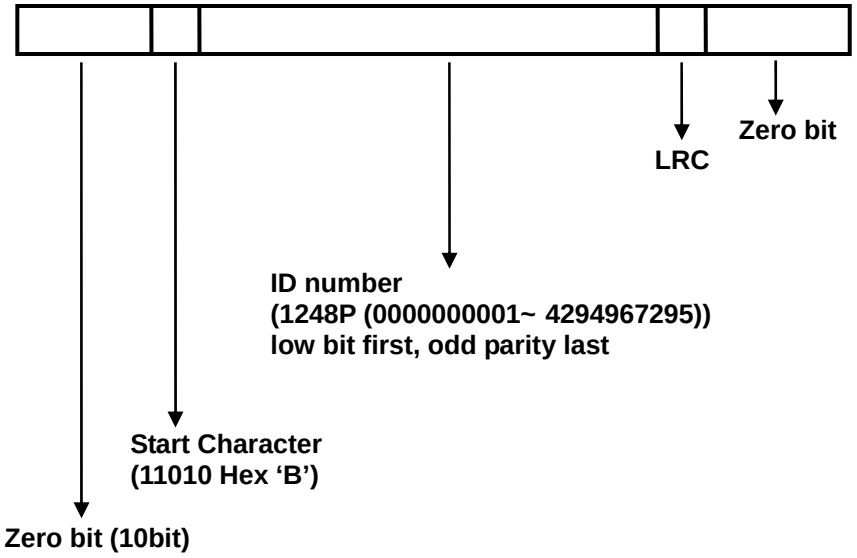
26bit Wiegand output format		34bit Wiegand output format	
Bit 1	Even parity of bit 2 ~ bit 13	Bit 1	Even parity of bit 2 ~ bit 17
Bit 2～9	Facility code (000 ~ 255)	Bit 2～25	4byte ID number (0000000001 ~ 4,294,967,295)
Bit 10～25	ID number (00000 ~ 65,535)		
Bit 26	Odd parity of bit 14 ~ bit 25	Bit 34	Odd parity of bit 18 ~ bit 33

2. Timing diagram

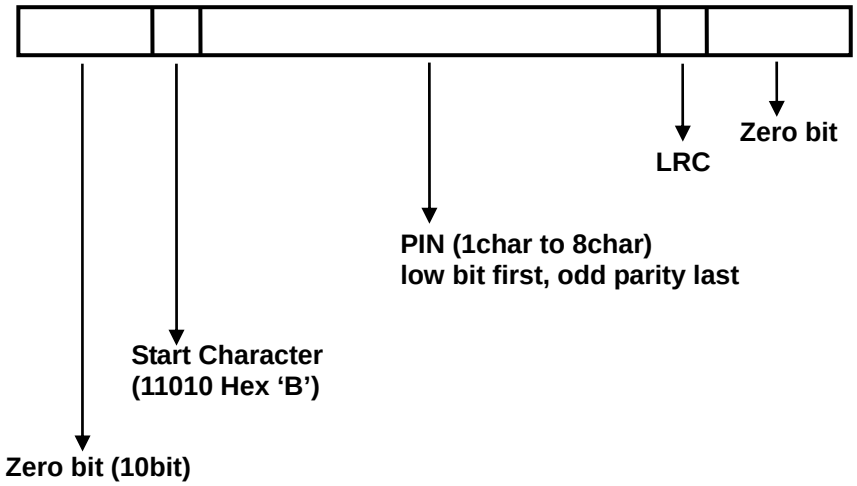


8-2. ABA Track II Magstripe output format

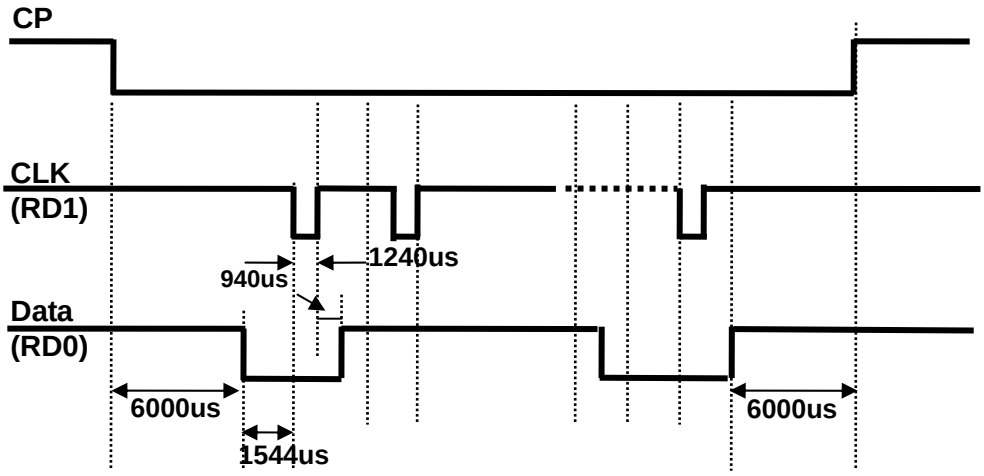
1. Data format (for Card numbers)



2. Data format (for PIN)

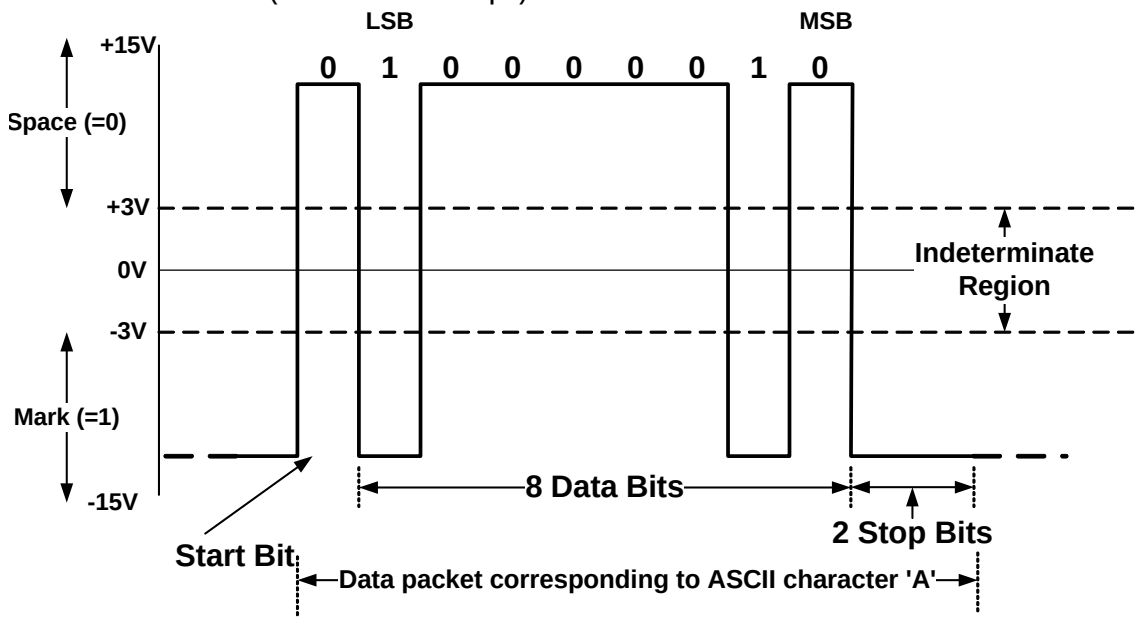


3. Timing diagram

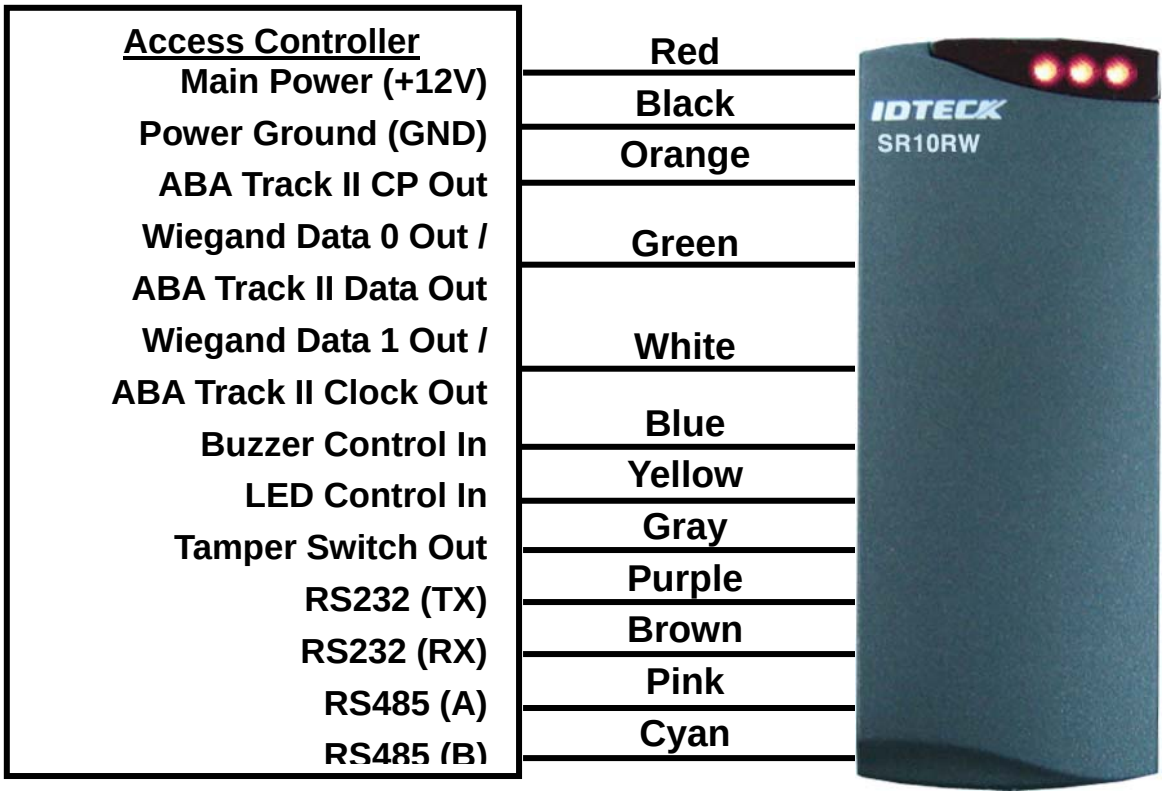


8-3. RS-232 output format

1. Data format (Baud rate: 9600bps)



9. Wire Connection to Access Controller



10. Operation

10-1. After applying a power on the SR10RW, beeper sounds and 3 LED indicators turn on changing color red, green and red in order. And then 3 LED indicators turn off. Each LED indictor turns on red from the left in order again with beeping.
(After applying a power, initialization status of the SR10RW is set to read card serial number when RF card is read.)

10-2. Until turning on green LED indictors with beeping one time, you make card read on the reader. After the reader transmits card data to access controller, LED indicator return red to wait for next card.

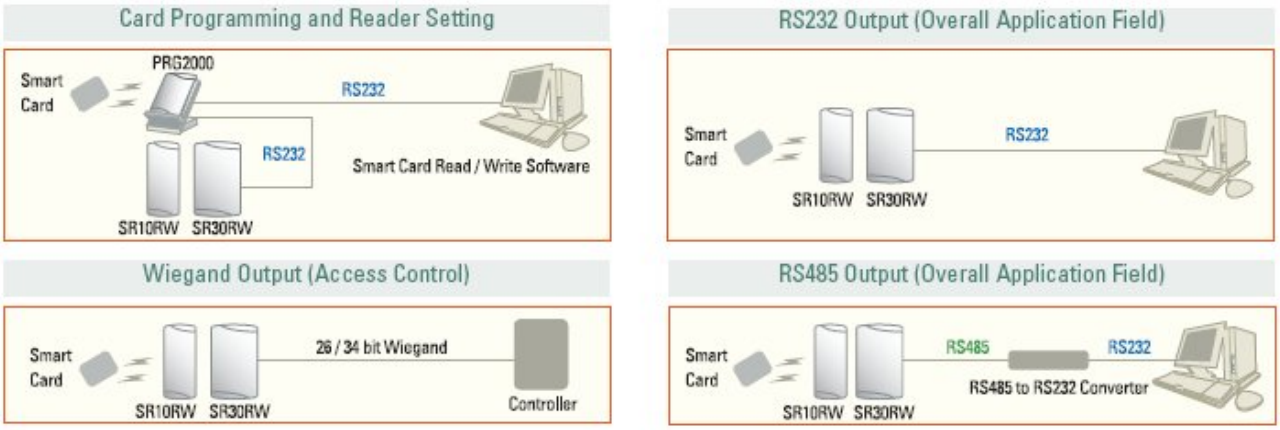
If the reader transmits card data normally, all red LED indicators turn off with beeping one time and then each LED indicator turns on green from the left in order. If all LED indicators turn on green, they are changed red.
If not, twice alarm occurs that it is caused by retrying. And red LED indicators flicker one time at all.
In addition, third alarm occurs that it is caused by error. Also red LED indicators flicker one time at all.

※ If the unit doesn't operate normally, make sure that 12. Troubleshooting on this manual.

10-3. Tamper switch
If you open SR10RW bezel, until switching no.7 of DIP switch, tamper switch operates that beeper sounds and 3 LED indicators turn on / off in order. If you set not to operate tamper switch, no.7 of DIP switch keep switching.

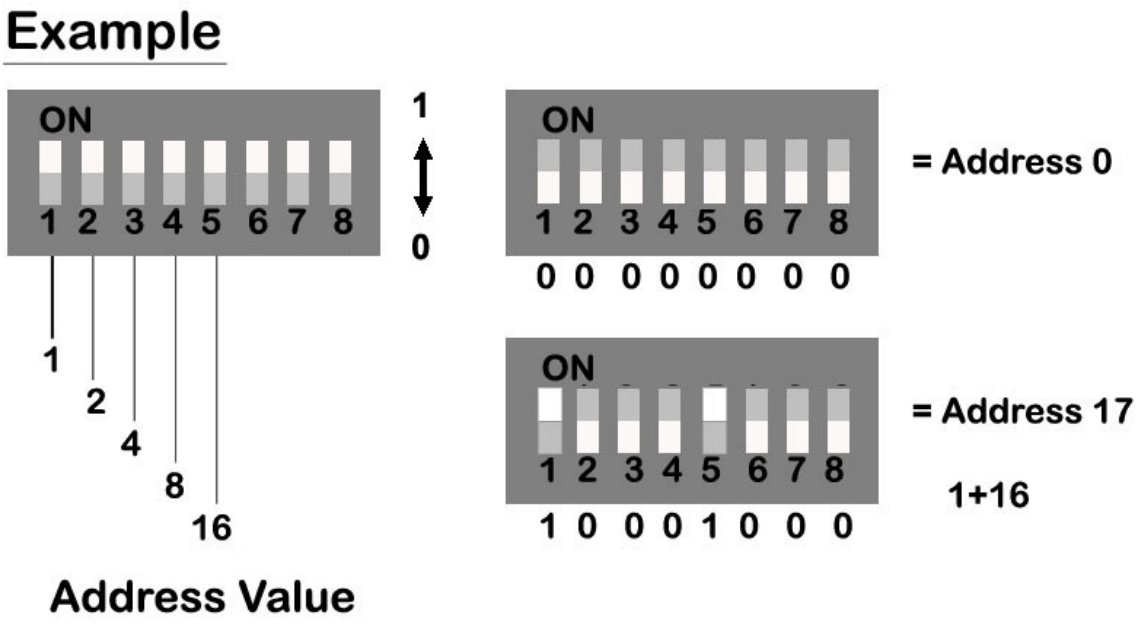
10-4. Setting a "Smart Card Read / Write Software"
After applying a power, initialization status of the SR10RW is set to read card serial number.
Using the SR10RW, make sure that user's manual of IDTECK PRG2000 or Smart Card Read / Write Software to know methods on access control, debt meal and cashless payment.

10-5. SR10RW Configuration



The SR10RW connects to PRG2000 for access control, debt meal and cashless payment.
To know connection methods, make sure that user's manual of PRG2000 or Smart Card Read / Write Software.
The SR10RW supports RS232 or RS485 communication on the all field. Their communication is set by DIP switch. The SR10RW also supports 26/34bit Wiegand output format on access control.

10-6. Setting a DIP switch



No. 6 – RS232 or RS48 5(0: RS232, 1: RS485)
No. 7 – Tamper output enable / disable (0: Enable, 1: Disable)
No. 8 – SR10RW initialization (1: initialization (Switch to 0 after keeping about 1.5sec.))

11. Troubleshooting

※ If a problem occurs during the use of the product, do not attempt to disassemble the product by yourself. Please check the following suggestions. If your problem still persists, contact our customer service center.

☞ Card is not read when user approaches card on Smart Card Read / Write Series.	
Cause	At impressed voltage whether use not regular voltage(DC 12V) but irregular voltage or do different card type
Solution	1. Confirm to regular voltage in manual and catalog 2. Confirm to Phillips Mifare™ Card (or not to it.) => Never use 125KHz card. Confirm 13.56MHz card whether ISO14443 B Type or ISO15693. Never operate ISO14443 B Type and ISO15693 too. (Contact buying company to confirmation usage of card.) 3. Confirm whether proper format or improper format in corresponding reader. => Developed reader for that purpose of access, attendance and debt meal etc. is two usages. The one is Serial Number and another is to encode desired data in sector and block Being the other, confirm to same format of issued card and reader (Contact card publisher or buying company to confirmation usage.) 4. Don't reading despite confirmation from step 1 to step 3, contact RMA center.

☞ When sounding buzzer and being on LED faintly at impressed voltage	
Cause	At installing reader, whether use adapter(less capacitance adapter than electric current of reader's consumption) to power or don't supply enough current to reader because length of power cable is too long.
Solution	1. When using adapter, confirm to use more capacitance adapter than mentioned electric current of reader's consumption manual and catalog. If several readers connect one adapter, confirm to use much more capacitance adapter than reader's count by electric current of reader's consumption value. 2. Although power can supply enough current, replace dedicated line or reinforce line whether power cable isn't dedicated line or power loss is much because communication cable, UTP cable and etc. are too long. 3. If same situation appears despite confirmation from step1 to step2, contact RMA center.

☞.When card reads, Read Range of every card differ.	
Cause	Although same formatted card, specific character of card classified by manufacturing company differs. (Reader of IDTECK is tuned by standard Phillips Mifare™ Card.)
Solution	1. Unique character of coil and manufacturing process by card manufacture company decide unique card character. So confirm using card to manufacture in same company. If card made in several kinds of manufacturing company, every card which comes out Read Range differently is normal operation. 2. If Read Range differs every reading time of card despite same card manufacture company, contact RMA center.

12. FCC Registration Information

FCC REQUIREMENTS PART 15

Caution: Any changes or modifications in construction of this device which are not expressly approved by the manufacturer for compliance could void the user's authority to operate the equipment.

NOTE: This device complies with Part 15 of the FCC Rules.

Operation is subject to the following two conditions;

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B Digital Device, pursuant to Part 15 of the FCC Rules. These limits are designed to this equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.
However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the radio or television off and on, the user is encouraged to try to correct interference by one or more of the following measures.

1. Reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on another circuit.
4. Consult the dealer or an experienced radio/TV technician for help.

13. Warranty and Service

The following warranty and service information applies only to the United States of America and Republic of Korea. For the information in other countries, please contact your local distributor.
To obtain in or out of warranty service, please prepay shipment and return the unit to the service facility listed below.

Headquarters: IDTECK Co., Ltd.
5F Ace Techno Tower B/D,
684-1 Deungchon-Dong, Gangseo-Gu,
SEOUL, KOREA 157-030
Tel: +82-2-2659-0055
Fax: +82-2-2659-0086
E-mail: webmaster@idteck.com
Website: www.idteck.com

U.S Branch: RF Logics Inc.
370 Amapola Ave, #106
Torrance, CA 90501
Tel: 310-782-8383
Fax: 310-782-8298
E-mail: rflogics@rflogics.com
Website: www.rflogics.com

Hong Kong Branch: IDTECK Hong Kong
12/F, B2B Centre, No.36 Connaught Road West, Hong Kong
Tel: 852-2581-9580
Fax: 852-2234-5150
E-mail: alchu@gala.com.hk
Website: www.ristarhk.com

Please use the original container, or pack the unit(s) in a sturdy carton with sufficient packing to prevent damage, include the following information:

1. A proof-of-purchase indicating model number and date of purchase.
2. Bill-to address.
3. Ship-to address.
4. Number and description of units shipped.
5. Name and telephone number of person to contact.
6. Reason for return and description of the problem.

NOTE: Damage occurring during shipment is deemed the responsibility of the carrier, and claims should be made directly to the carrier.

The specification contained in this manual are subject to change without notice at any time.

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